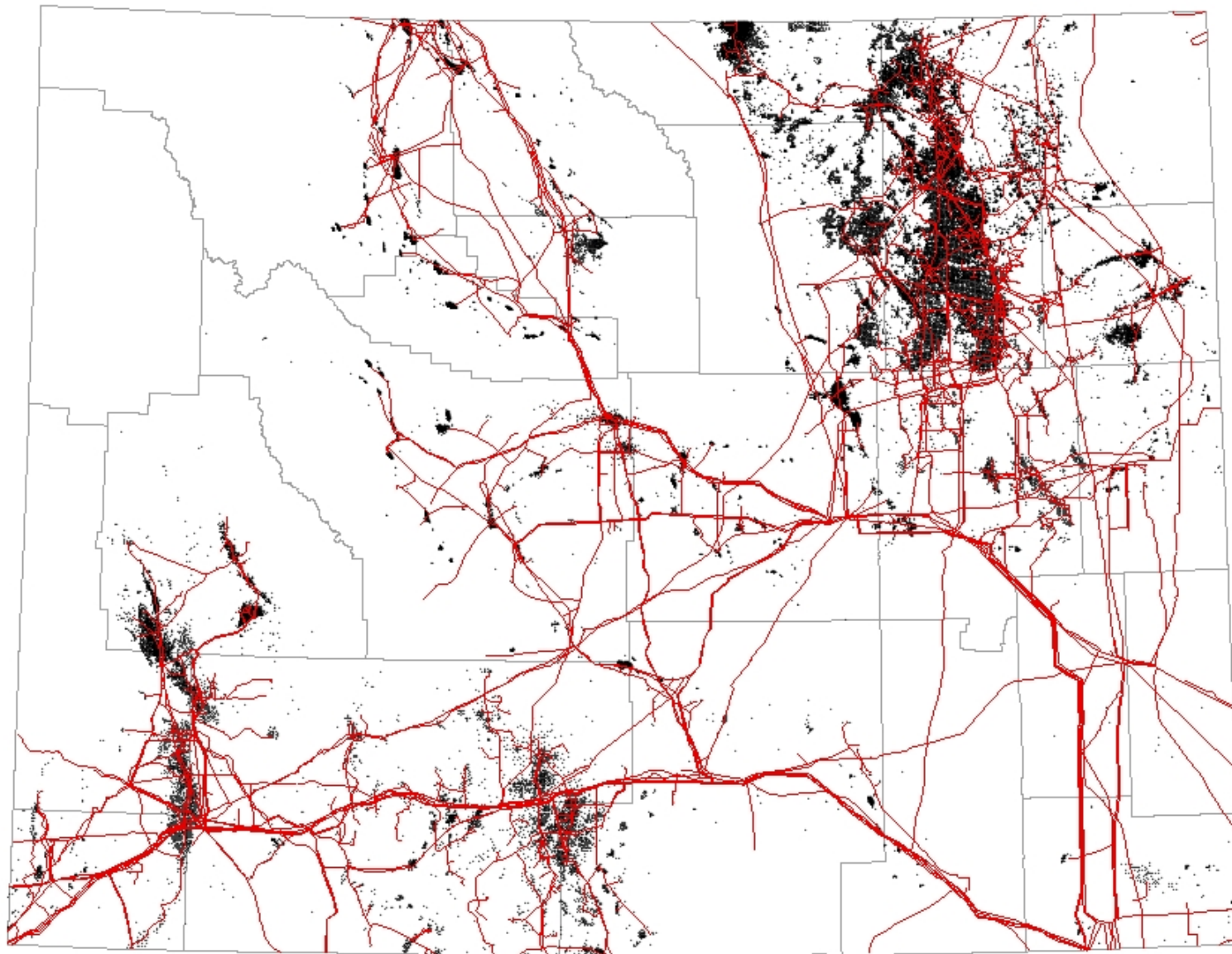


WGFC MITIGATION POLICY/PROCESS

WGFC RECOGNIZES GROWTH, DEVELOPMENT, AND LAND CHANGES WILL OCCUR



Current Statewide Well and Major Pipeline System



TO MINIMIZE WILDLIFE IMPACTS EARLY COORDINATION BY WGFD, LAND MANAGEMENT AGENCIES AND INDUSTRY IS CRITICAL

- ➔ EARLY PLANNING FOCUSES ON WAYS TO AVOID IMPACTS THROUGH PROJECT DESIGN

COOPERATING AGENCY STATUS

- ➡ AVAILABLE TO ANY ENTITY WITH AUTHORITY OR EXPERTISE FOR RESOURCES
- ➡ ALLOWS AGENCY ADJUNCT MEMBER STATUS ON FED ID TEAMS
- ➡ WYOMING STATE COOPERATORS GROUP
 - WGFD, WDA, SHPO, DEQ, OGC, WSLI, GOV OFFICE
 - MEET REGULARLY TO COORDINATE STATE INPUT

WGFC DIRECTS WGFD TO:

- ➡ I.D CRUCIAL HABITATS/SENSITIVE SPECIES
- ➡ I.D. ANTICIPATED IMPACTS
- ➡ RECOMMEND ALTERNATIVES WITH LEAST IMPACT
- ➡ DISCLOSE IRREVERSABLE IMPACTS
- ➡ ENSURE MITIGATION/MONITORING IS DONE
 - ROD
- ➡ UTILIZE BEST SCIENCE TO RECOMMEND MITIGATION

TWO CATEGORIES OF MITIGATION

➡ RESOURCE MAINTENANCE – PREFERRED

- AVOID, MINIMIZE, REPAIR – KEEP WHAT YOU HAVE

➡ RESOURCE COMPENSATION –

- REPLACE OR PROVIDE SUBSTITUTE RESOURCES – DIFFICULT, TYPICALLY NOT 100%

MITIGATION SEQUENCE - CEQ

- ➡ AVOID – LOCATION & DESIGN
- ➡ MINIMIZE – TIMING, DEGREE OF IMPACT
- ➡ RECTIFY – REPAIR, RECLAIM HABITAT
- ➡ COMPENSATE – PROVIDE SUBSTITUTE HABITAT FUNCTION
 - ONSITE
 - OFFSITE

AUTHORITIES

- ➡ WGFC HAS NO REGULATORY AUTHORITY ON LAND USE DECISIONS EXCEPT ON WGFC OWNED LANDS
- ➡ ALL RECOMMENDATIONS ARE ADVISORY IN NATURE
- ➡ RECOMMENDATIONS BECOME BINDING IF INCLUDED IN PERMIT CONDITIONS OR ROD BY LAND MANAGEMENT AGENCIES

MITIGATION COSTS

- ➡ WGFC RECOGNIZES MITIGATION MAY INCREASE COST OF DEVELOPMENT
- ➡ WGFC BELIEVES COSTS ASSOCIATED WITH WILDLIFE MITIGATION INCLUDING MONITORING IMPLEMENTATION AND EFFECTIVENESS ARE THE RESPONSIBILITY OF THE PROJECT SPONSORS.

NOT ALL HABITAT IS EQUAL

➡ WGFC RECOGNIZES 4 CATEGORIES

- IRREPLACEABLE

- VITAL

- HIGH

- MODERATE

IRREPLACEABLE HABITATS

➡ CRITICAL HABITAT ASSOCIATED WITH T&E SPECIES

- SPECIES IN JEOPARDY OF LOCAL EXTIRPATION OR RANGEWIDE EXTINCTION, HABITAT FRAGILE OR EXTREMELY LIMITED
- WGFC RECOMMENDS NO REDUCTION IN SPECIES OR HABITAT FUNCTION EVEN TEMPORARILY

VITAL HABITAT

➡ MOST LIMITING HABITAT NEEDED TO
SUPPORT OBJECTIVE NUMBERS OF
WILDLIFE

- CRUCIAL BIG GAME WINTER RANGE, NSS 1-3,
CLASS BLUE STREAMS - > 600 LBS/MILE
- WGFC RECOMMENDS NO SIGNIFICANT
REDUCTION IN SPECIES OR HABITAT
FUNCTION

HIGH HABITAT

⇒ HABITAT THAT CONTRIBUTES TO THE MAINTENANCE OF WILDLIFE BUT NOT LIMITING FACTOR

- BIG GAME WINTER/YEARLING RANGE, CLASS RED STREAMS – 300-600 LBS/MILE
- WGFC RECOMMENDS NO LONG TERM SIGNIFICANT REDUCTION IN SPECIES OR HABITAT FUNCTION

MODERATE HABITAT

⇒ HABITAT IS COMMON AND NOT LIMITING WILDLIFE

- SUMMER/YEARLONG RANGE FOR BIG GAME AND MANY NONGAME SPECIES
- WGFC RECOMMENDS NO LARGE SCALE LOSS IN SPECIES OR HABITAT FUNCTION

INDIRECT IMPACTS

➡ AVOIDANCE OF ACTIVITY, INCREASED POACHING, MORE DEMAND ON WILDLIFE BY INCREASED NUMBER OF PEOPLE.

- WGFC RECOMMENDS WGFD TO EVALUATE POTENTIAL INDIRECT IMPACTS AND RECOMMEND MITIGATION

- ◆ AWARENESS TRAINING, FINANCIAL ASSISTANCE FOR ADD'L LAW ENFORCEMENT, INSTALL MUFFLERS TO REDUCE NOISE, INCREASE ACREAGE OF ENHANCEMENT

Executive Order

Order 2008 - 2

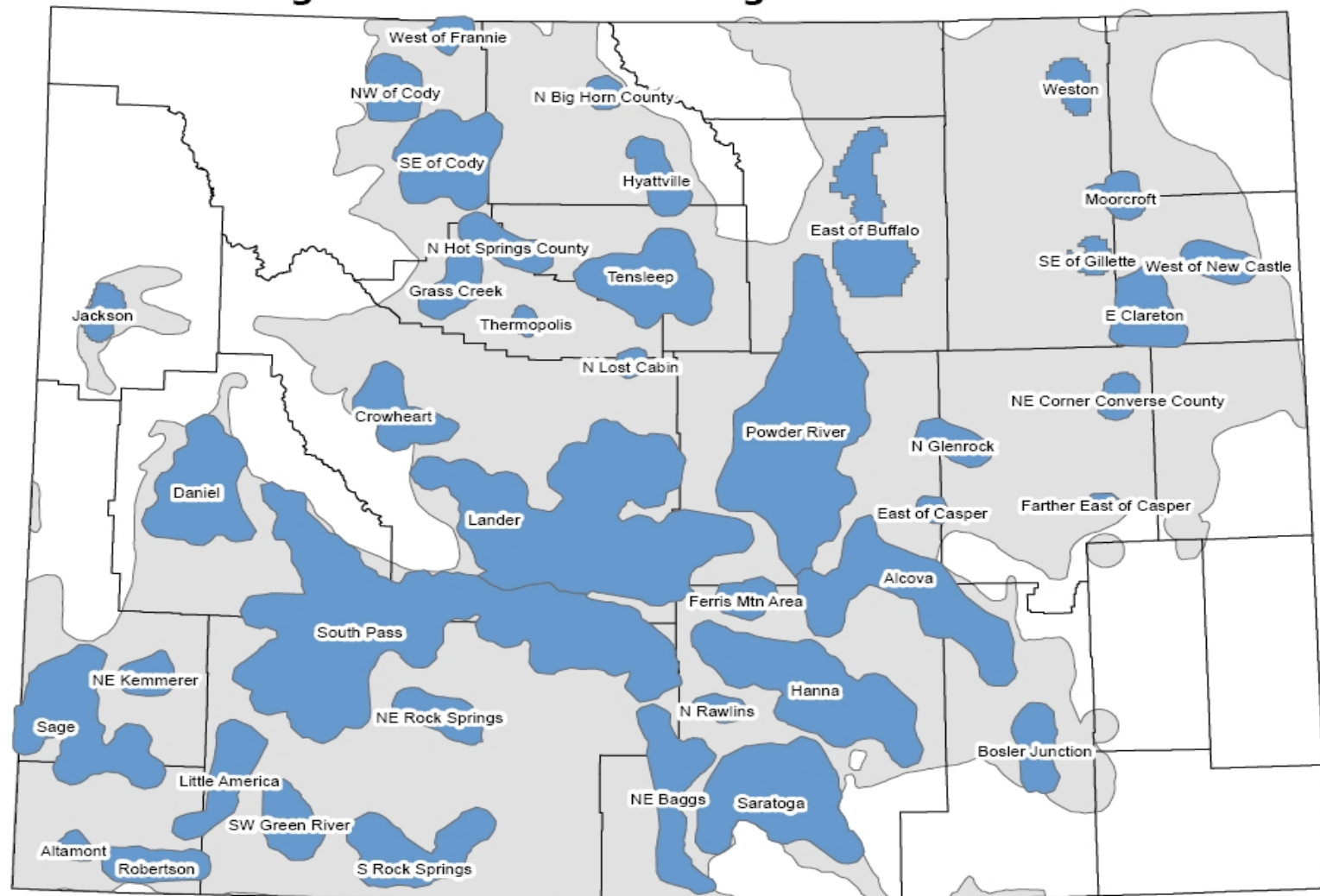
- ⇒ WHEREAS the Governor's Sage Grouse Implementation Team developed a "Core Population Area" strategy...to conserve the Greater Sage-Grouse in Wyoming into a statewide Strategy
- ⇒ WHEREAS on April 17, 2008, the Office of the Governor requested that the U.S. Fish and Wildlife Service review the "Core Population Area" strategy
- ⇒ WHEREAS on May 7, 2008, the U.S. Fish and Wildlife Service responded that the "core population area strategy is a sound framework for a policy by which to conserve greater sage-grouse in Wyoming

Executive Order

Order 2008 - 2

- ➔ NOW, THEREFORE...I, Dave Freudenthal, Governor of the State of Wyoming, do hereby issue this Executive Order providing as follows:
1. Management by state agencies should, to the greatest extent possible, focus on the maintenance and enhancement of those Greater Sage-Grouse habitats and populations within the Core Population Areas
 2. Current management and existing land uses within Core Population Areas should be recognized and respected by state agencies
 3. New development or land uses within Core Population Areas should be authorized or conducted only when it can be demonstrated by the state agency that the activity will not cause declines in Greater Sage-Grouse populations
 6. Incentives to enable development of all types outside Core Population Areas should be established...However, such development scenarios should be designed and managed to maintain populations, habitats and essential migration routes outside Core Population Areas

Sage-Grouse Core Breeding Areas Version 2



Nyssa Whitford
Nongame GIS Analyst
Lander Regional Office
08.22.08



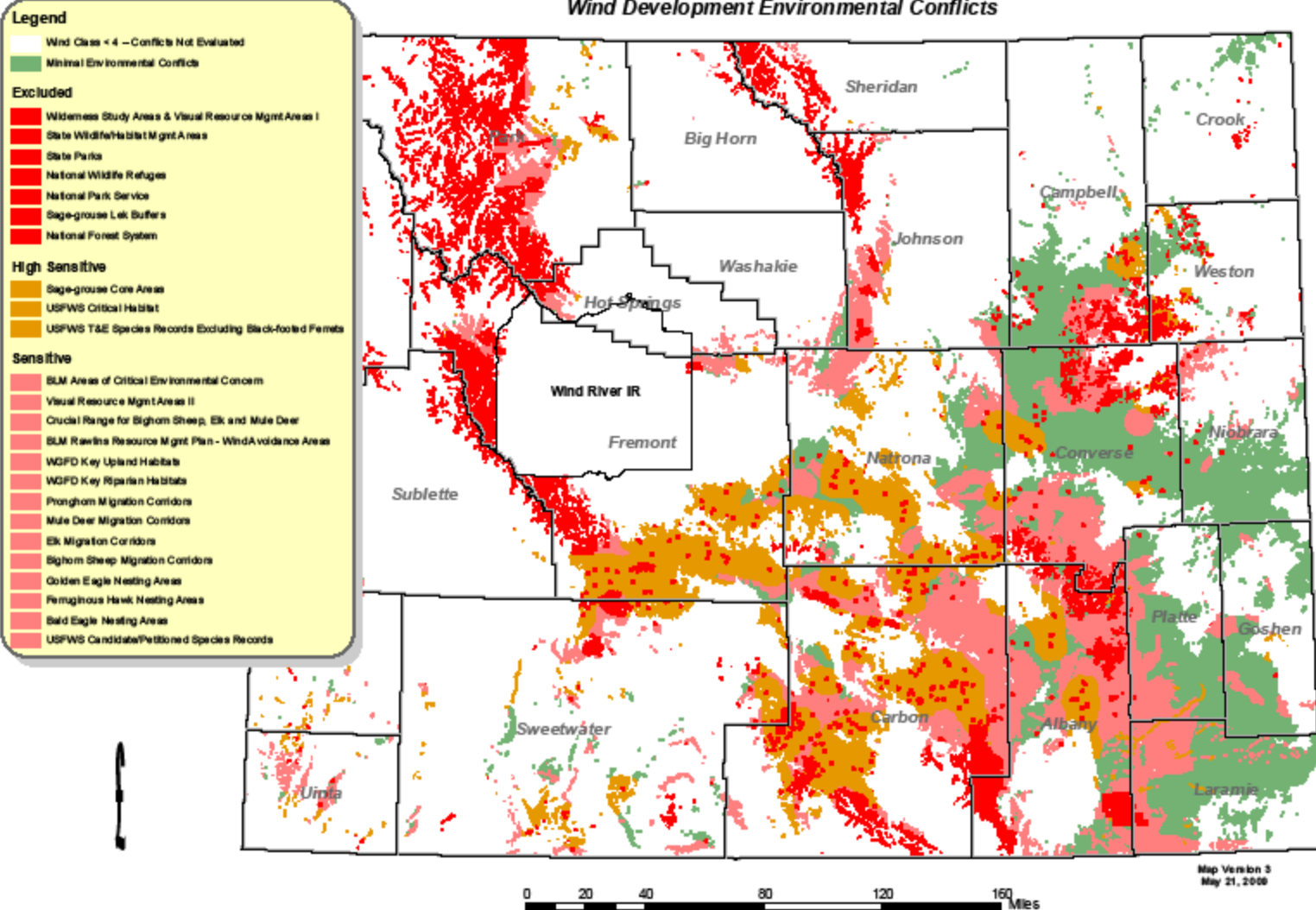
0 15 30 60 90 120 Miles

Core Areas shown were delineated by the Governor's Sage-Grouse Implementation Team during their 03.17.08 meeting in Lander, WY. Updates to the NE core areas from BLM-BFO.

- Core Areas 08.07.08
- Counties
- Current Sage-Grouse Distribution

Wyoming Class 4+ Winds

Wind Development Environmental Conflicts

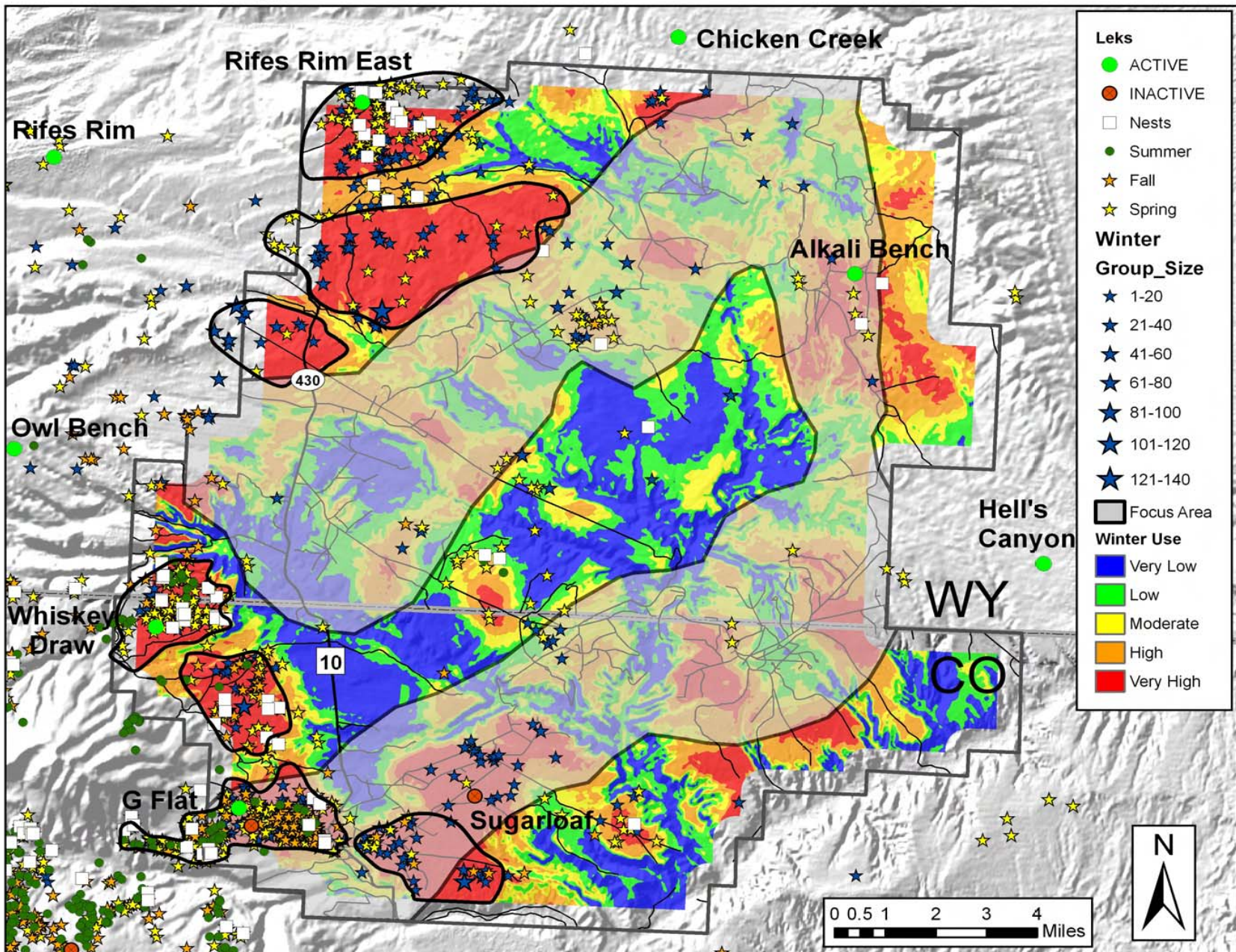


CURRENT EXAMPLES-HIAWATHA

⇒ HIAWATHA OIL AND GAS DEVELOPMENT EIS

- REVIEW EXISTING AND COLLECT SITE SPECIFIC WILDLIFE DATA
- RECOMMEND PRESCRIPTIVE STIPULATIONS
 - e.g. 0.6 mile lek nso, 1 well pad/section in core sage grouse habitat, require reclamation and enhancement to offset habitat loss, winter activity in localized clusters only
- ESTABLISH PERFORMANCE OBJECTIVES
 - Allow yearlong development activity as long as sage grouse population does not decline >15%.
- ESTABLISH MONITORING REQUIREMENTS
 - Monitor implementation, mitigation/reclamation effectiveness and wildlife trends relative to performance objectives - ROD.

Hiawatha Sage-Grouse Winter and Year-Round Concentrations



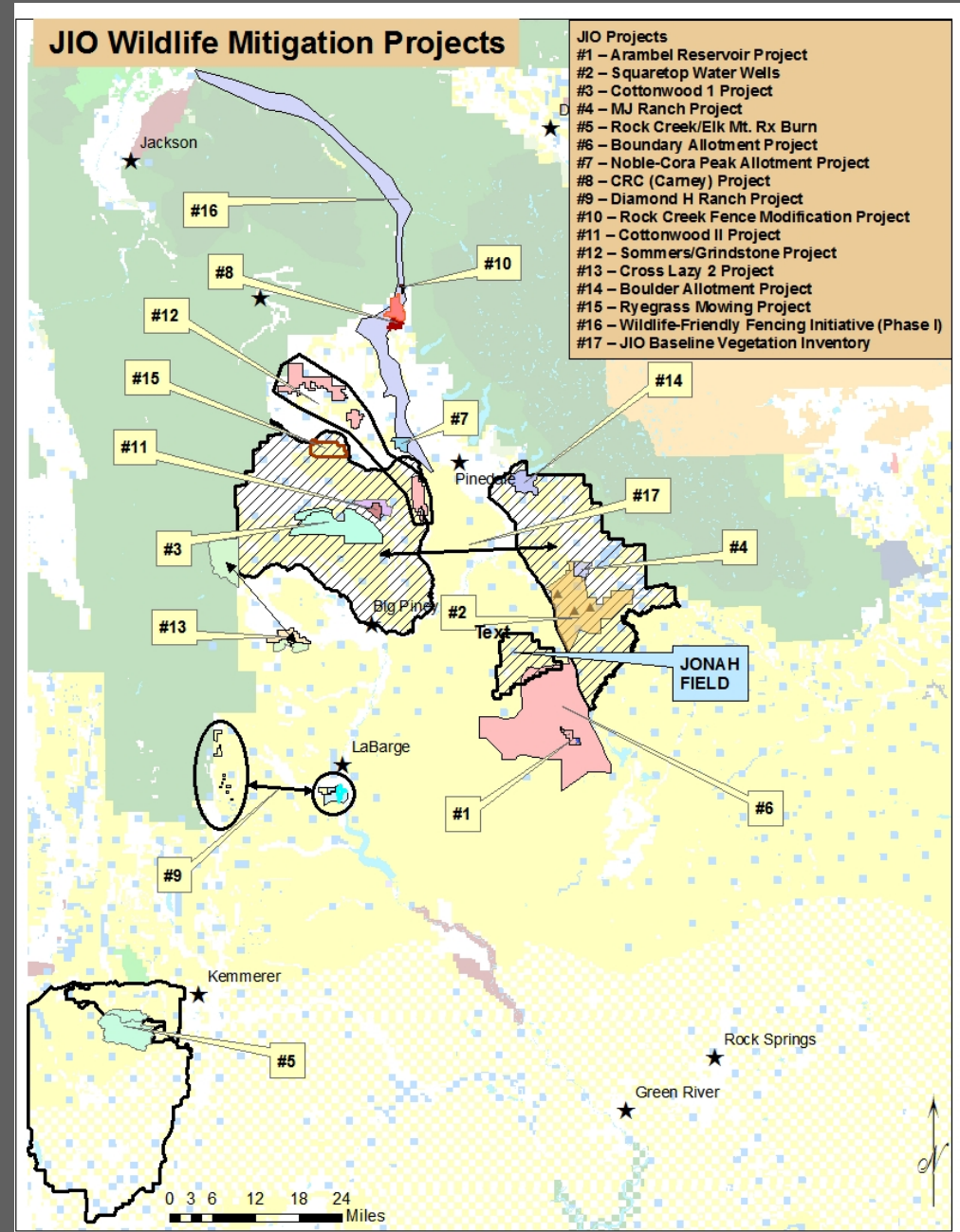
CURRENT EXAMPLES-JONAH

⇒ JONAH GAS DEVELOPMENT EIS

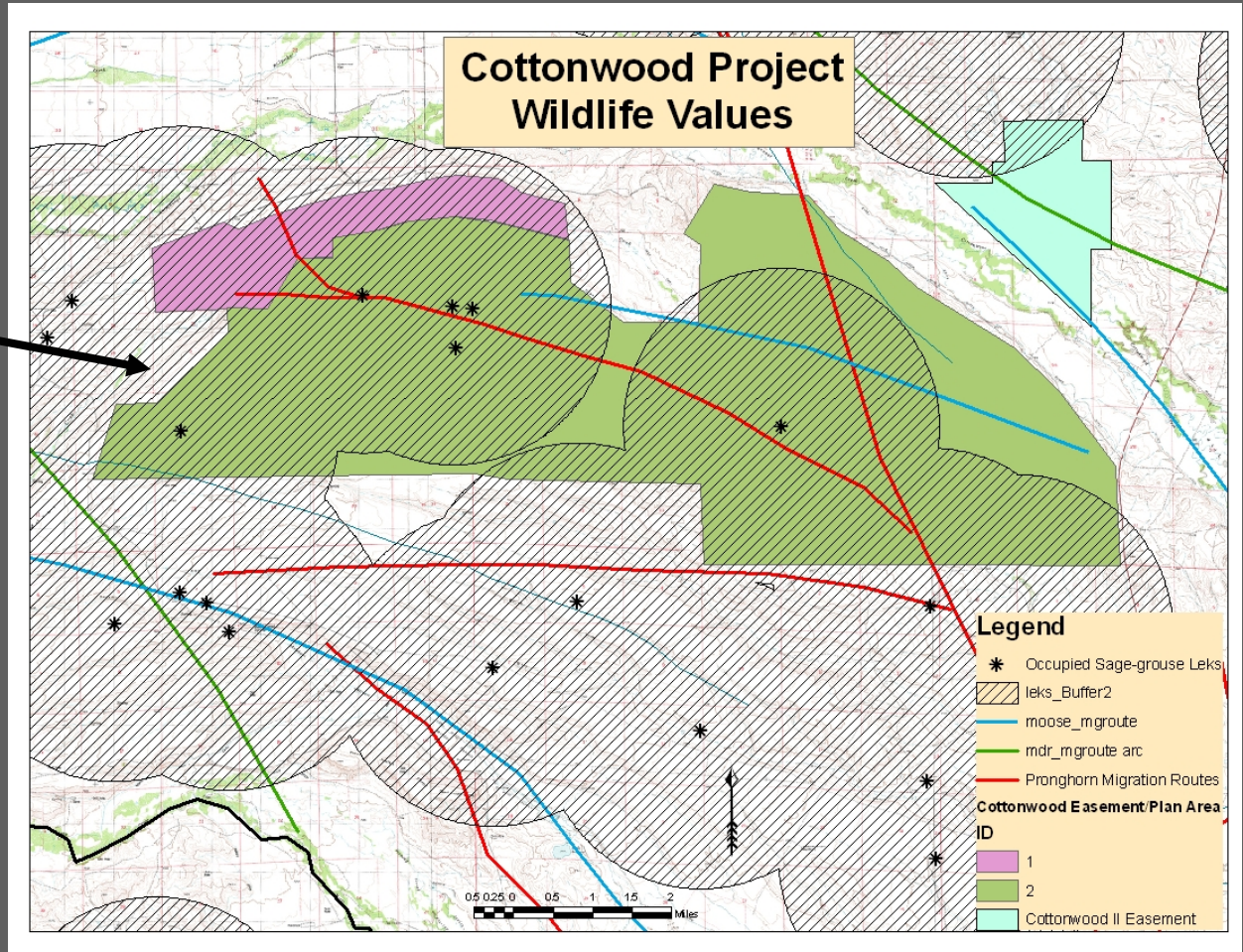
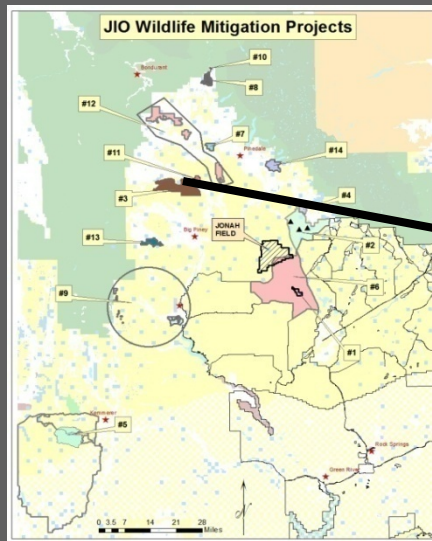
- REVIEW EXISTING AND COLLECT SITE SPECIFIC WILDLIFE DATA
- GEOLOGY/WELL SPACING PRECLUDES USE OF MOST PRESCRIPTIVE STIPULATIONS
 - Rolling disturbance cap 14,000 ac –surface disturbance vs reclamation – incentive for successful reclamation
 - Specific reclamation standards
- ESTABLISH OFFSITE MITIGATION OBJECTIVES
 - Project sponsor fund reclamation onsite and set up fund to accomplish offsite habitat enhancement at 3:1 ratio (\$24mm).
- ESTABLISH JIO FOR IMPLEMENTATION
 - Identify and oversee implementation of offsite mitigation
 - Ensure reclamation and monitoring conducted
 - Annual review by agency directors – BLM, DEQ, WGFD, WDA



Overview of JIO Projects



Cottonwood Ranch Project Location and Wildlife Values



CURRENT EXAMPLES-PAPA

⇒ PINEDALE ANTICLINE GAS DEVELOPMENT EIS

- REVIEW EXISTING AND COLLECT SITE SPECIFIC WILDLIFE DATA
- RECOMMEND PRESCRIPTIVE STIPULATIONS
 - LGS, cluster development, directional drilling to minimize pad density, specific reclamation requirements.
- ESTABLISH PERFORMANCE OBJECTIVES IN ROD
 - To address uncertainty of development impacts – wildlife thresholds
 - Project sponsor fund reclamation onsite and set up fund to mitigate documented wildlife impacts on and off site (\$36mm).
- ESTABLISH PAPO FOR IMPLEMENTATION
 - Identify and oversee implementation of offsite mitigation
 - Ensure reclamation and monitoring conducted
 - Annual review by agency directors

Pinedale Pronghorn Migration

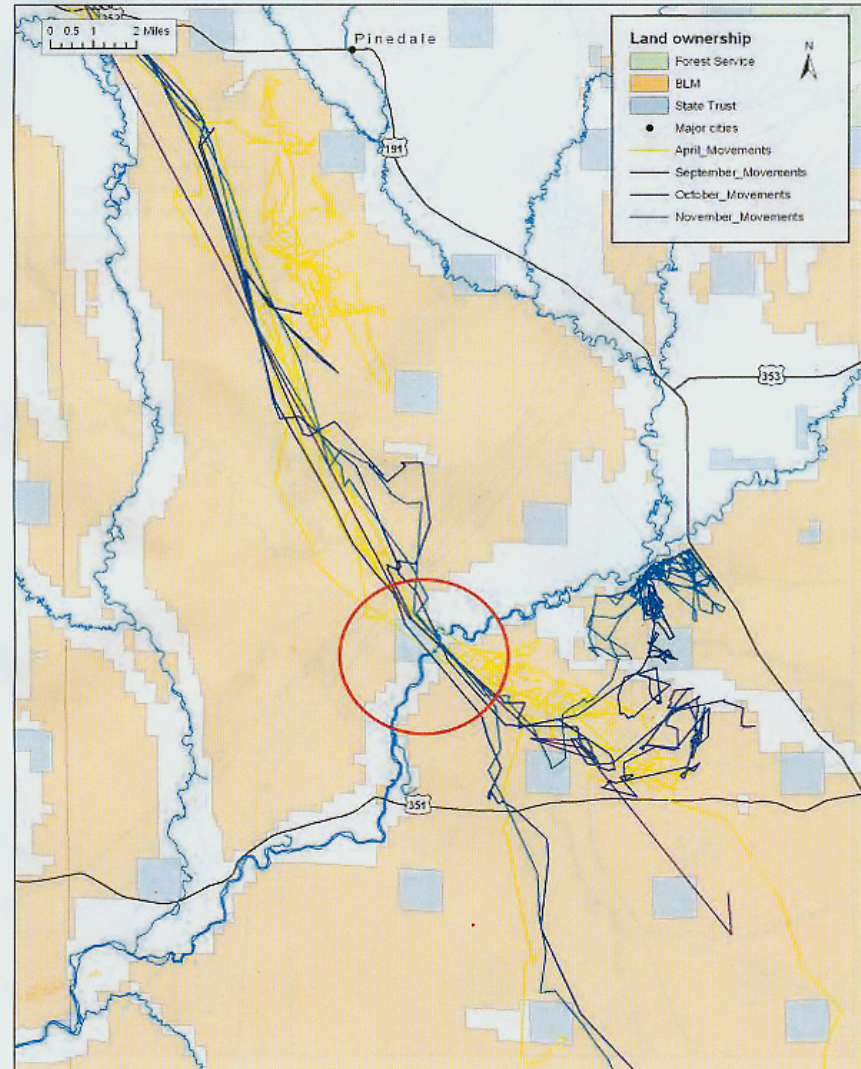
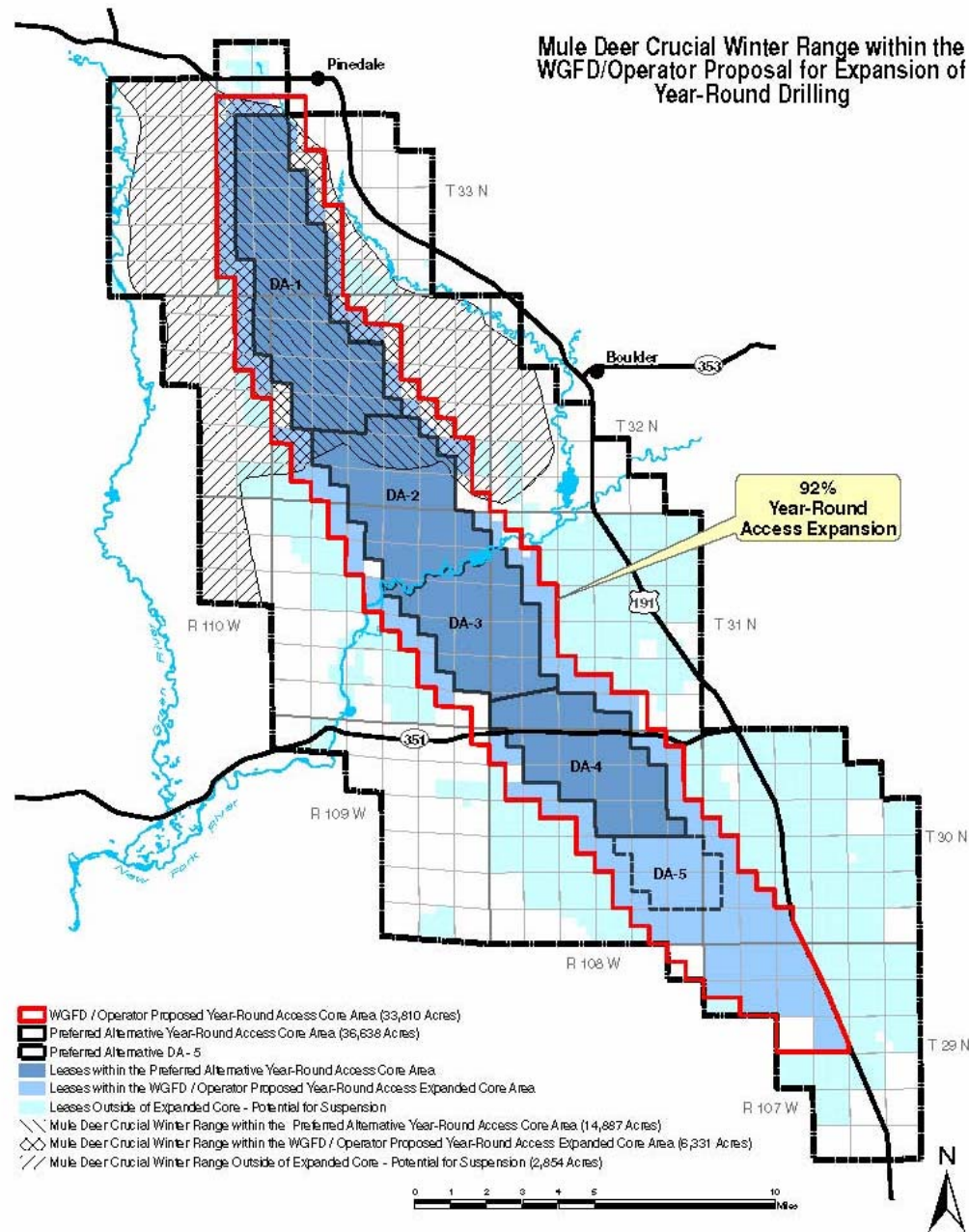


Figure 23. Spring and fall migratory movements of pronghorn along the southeast edge of the Anticline showing extensive use of a parcel of State Trust land to cross the New Fork River.

Mule Deer Crucial Winter Range within the WGFD/Operator Proposal for Expansion of Year-Round Drilling



CURRENT EXAMPLES-PRB

➡ POWDER RIVER BASIN OIL AND GAS DEVELOPMENT EIS ROD

■ TASK GROUPS (Aquatic and Wildlife) ESTABLISHED

- Develop monitoring plans and wildlife survey protocols
- Coordinate collection of aquatic and terrestrial wildlife data for adaptive management

■ AQUATIC TASK GROUP

- Monitoring to determine trends in algae, macroinvertebrates, and fish
- Herptile monitoring to determine population trends
- Sodium bicarbonate toxicity to amphibians, mussels, and fish

■ WILDLIFE TASK GROUP

- Sage-grouse research
- Bat and reptile habitat in south facing rocky outcrops

Reclamation

HABITAT ENHANCEMENT



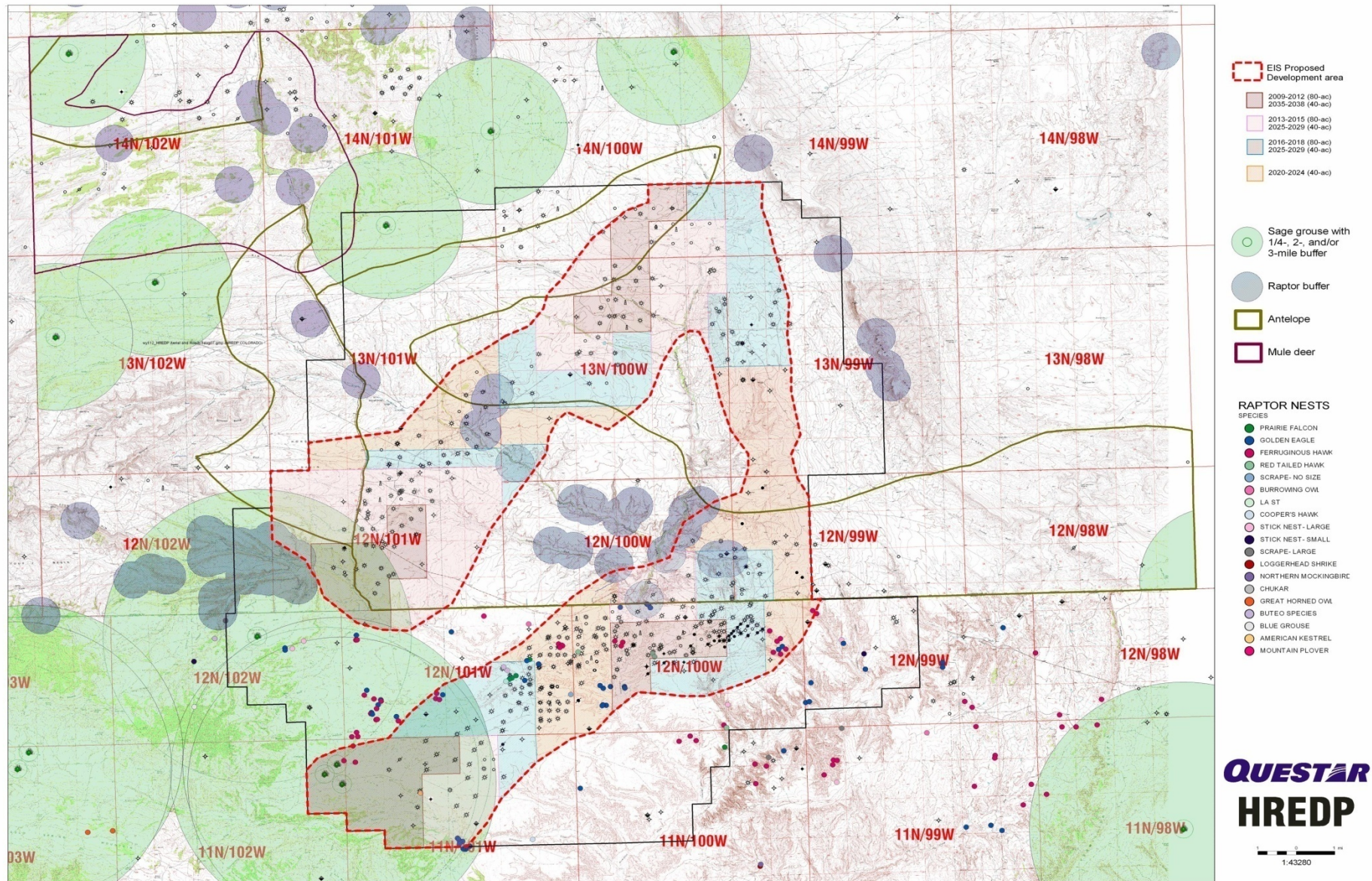
Wildlife Monitoring Plan

- ⇒ Mule Deer
- ⇒ Pronghorn
- ⇒ Sage Grouse
- ⇒ Pygmy Rabbit
- ⇒ White-tailed Prairie Dog
- ⇒ Raptors

QUESTIONS?



Hiawatha Proposed development





Powder River above Crazy Woman July 2005

Habitat

☆ JUL05_channelunits

Island

Run

Shoal

Riffle

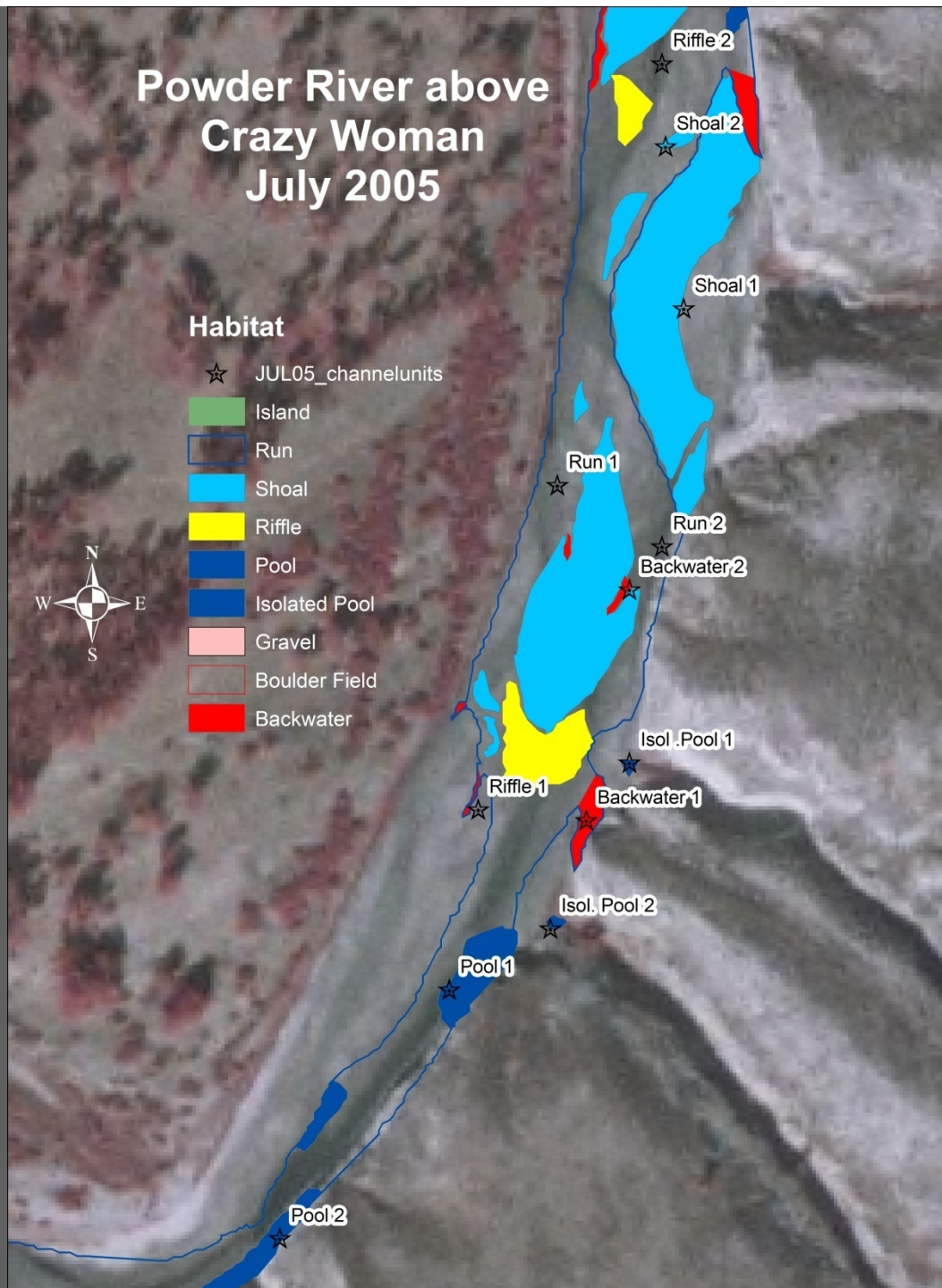
Pool

Isolated Pool

Gravel

Boulder Field

Backwater



Mule Deer

- ⇒ What we need to monitor
- ⇒ What data do we have
- ⇒ What data do we need
- ⇒ Objective – impact thresholds
- ⇒ How to monitor objective
- ⇒ If trigger is met- anticipated actions
- ⇒ Estimated Costs

What we need to monitor

- ⇒ Population parameters- change
- ⇒ Habitat parameters- change in use

What data we have

- ⇒ Herd Unit population data
- ⇒ Habitat modeling

What new data is needed

- ⇒ Quadrat sampling - new
- ⇒ Post-season classification counts
- ⇒ Harvest data
- ⇒ Change in ratio surveys
- ⇒ Annual adult survival - new
- ⇒ Monitor habitat use with collared/marked individuals - new

Objective

- ⇒ Identify population change annually
- ⇒ Identify avoidance of pads or roads

How to monitor objective

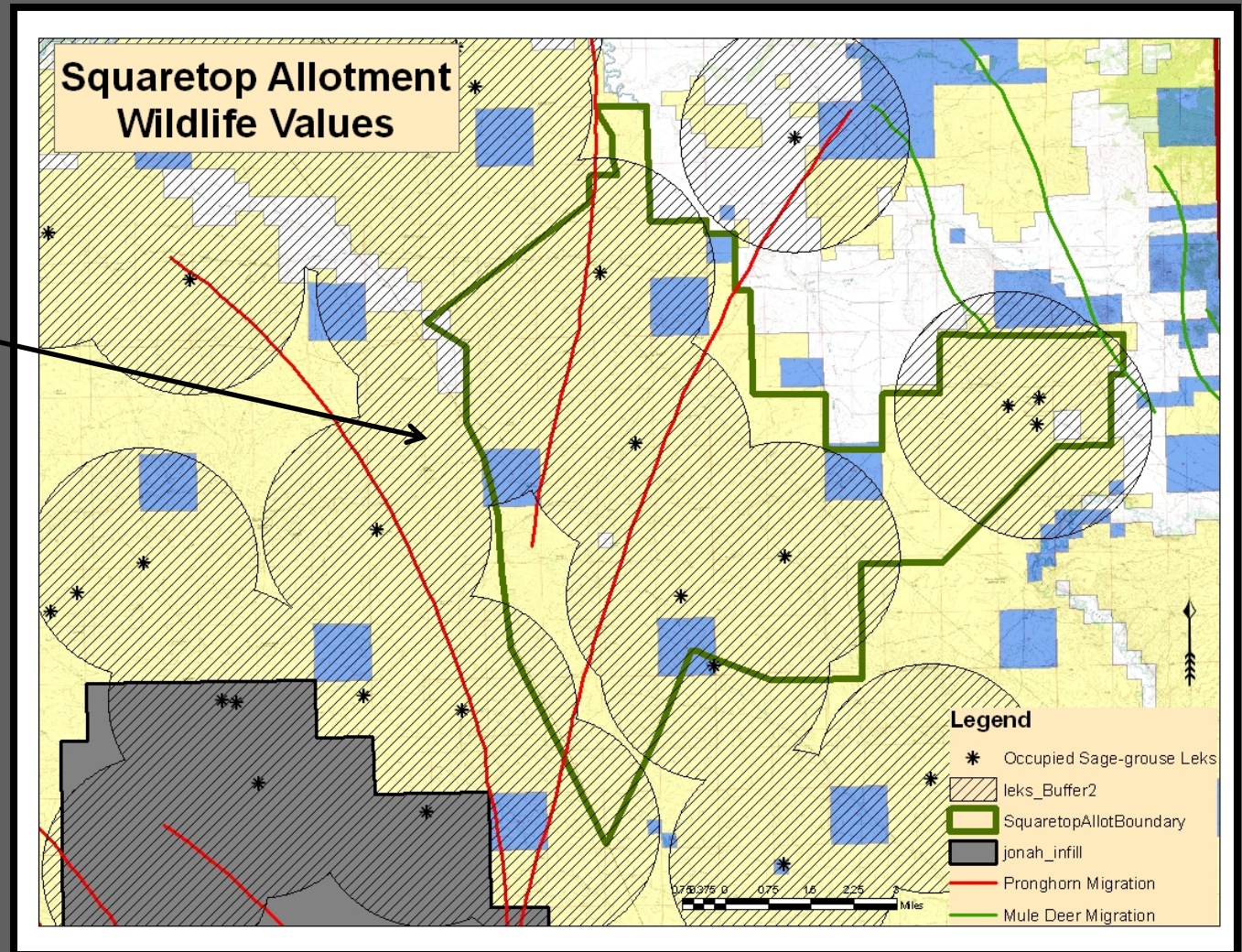
- ⇒ Compare population trends
- ⇒ Resource Selection Probability function modeling

If trigger is met- anticipated action

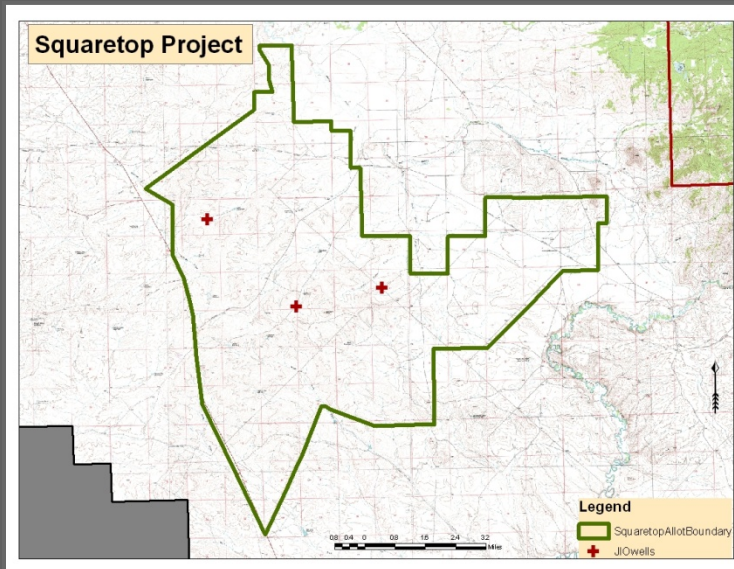
⇒ Appropriate mitigation responses

- Protections
- Habitat enhancements
- Easements
- Pace of development

Squaretop Allotment Project



Squaretop – Project Description



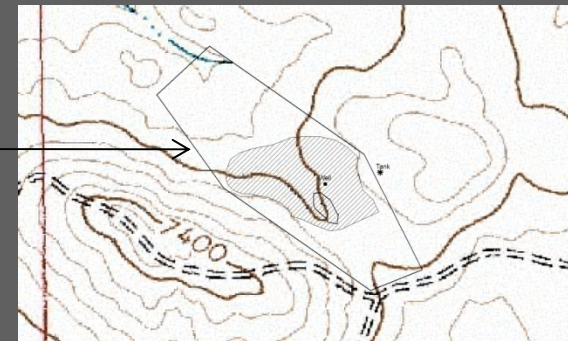
Well Locations



Overview of Well Site

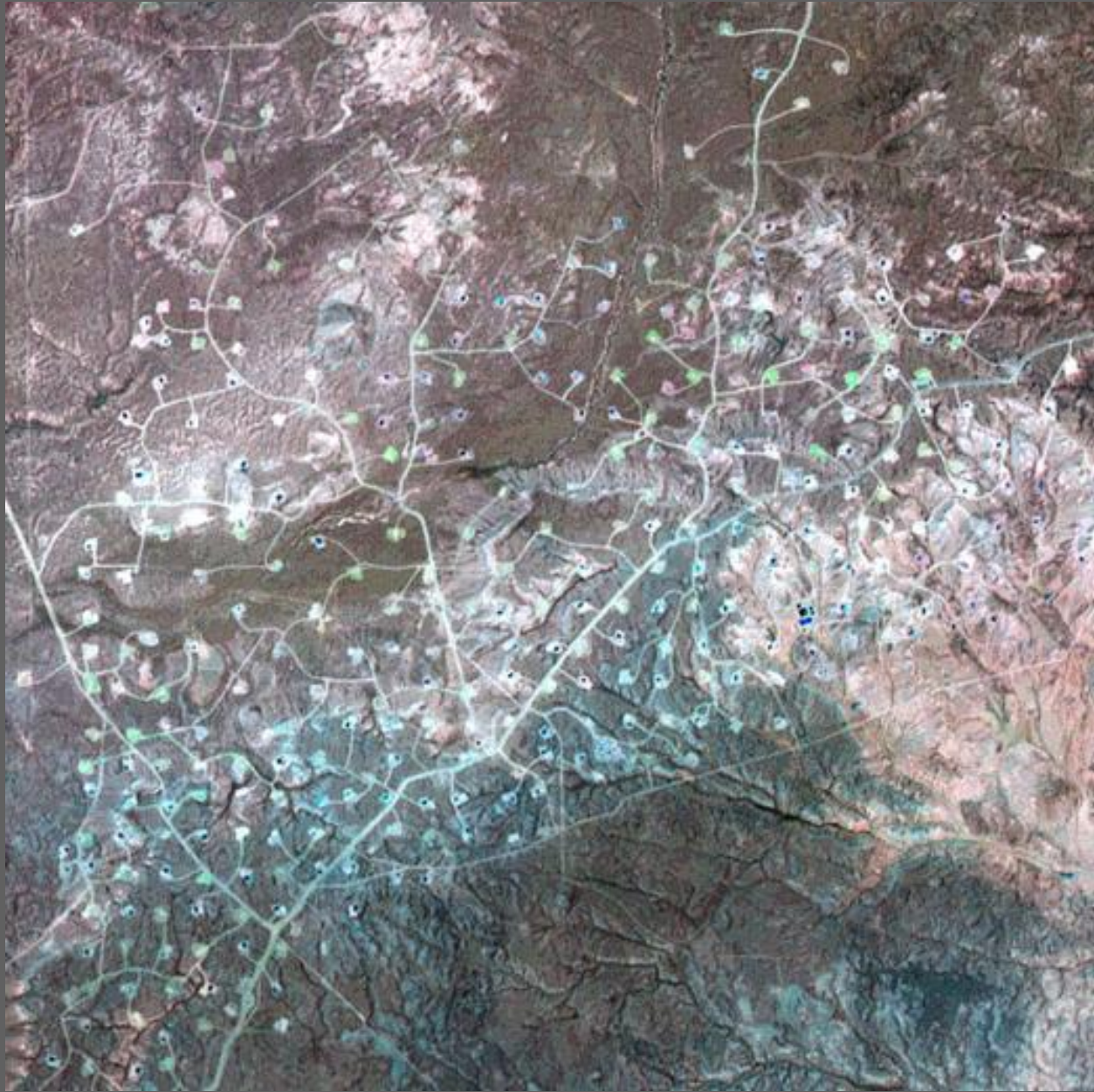


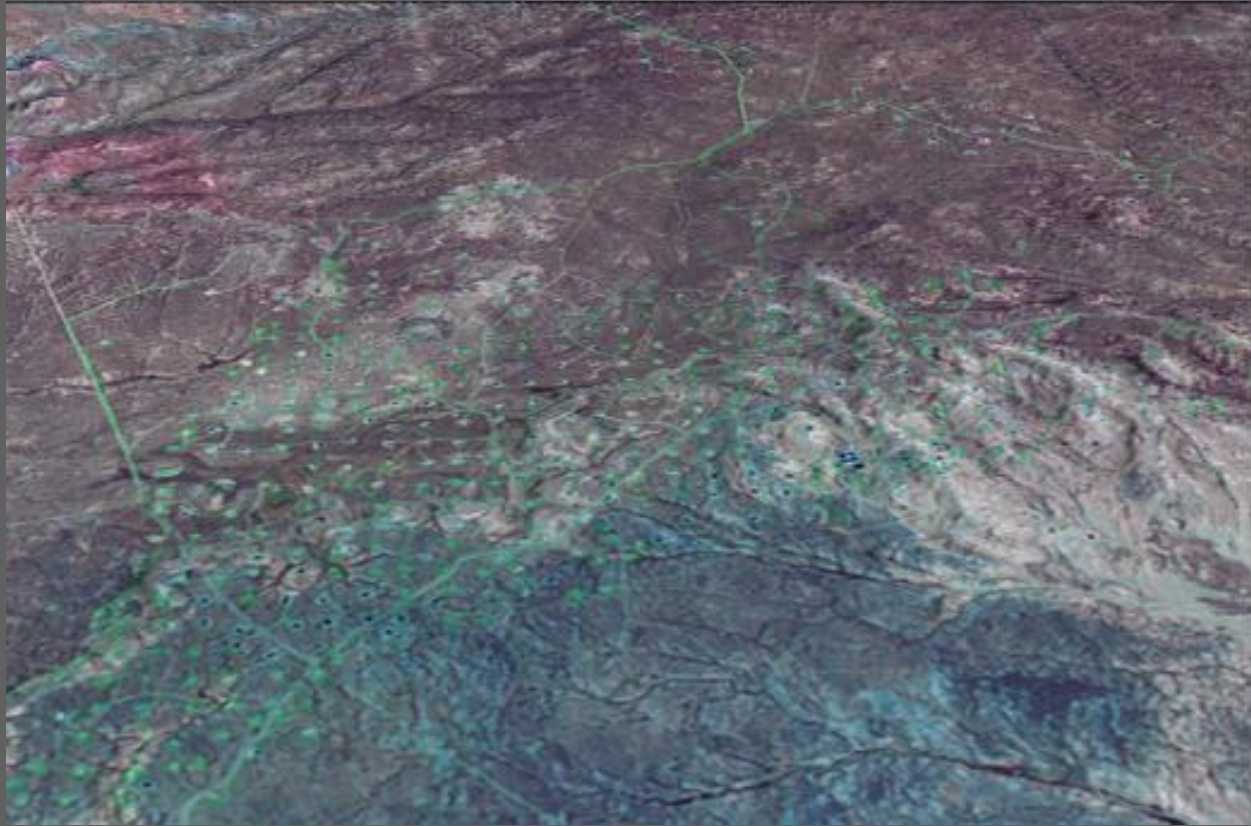
Included fenced
area for wildlife
w/ well overflow

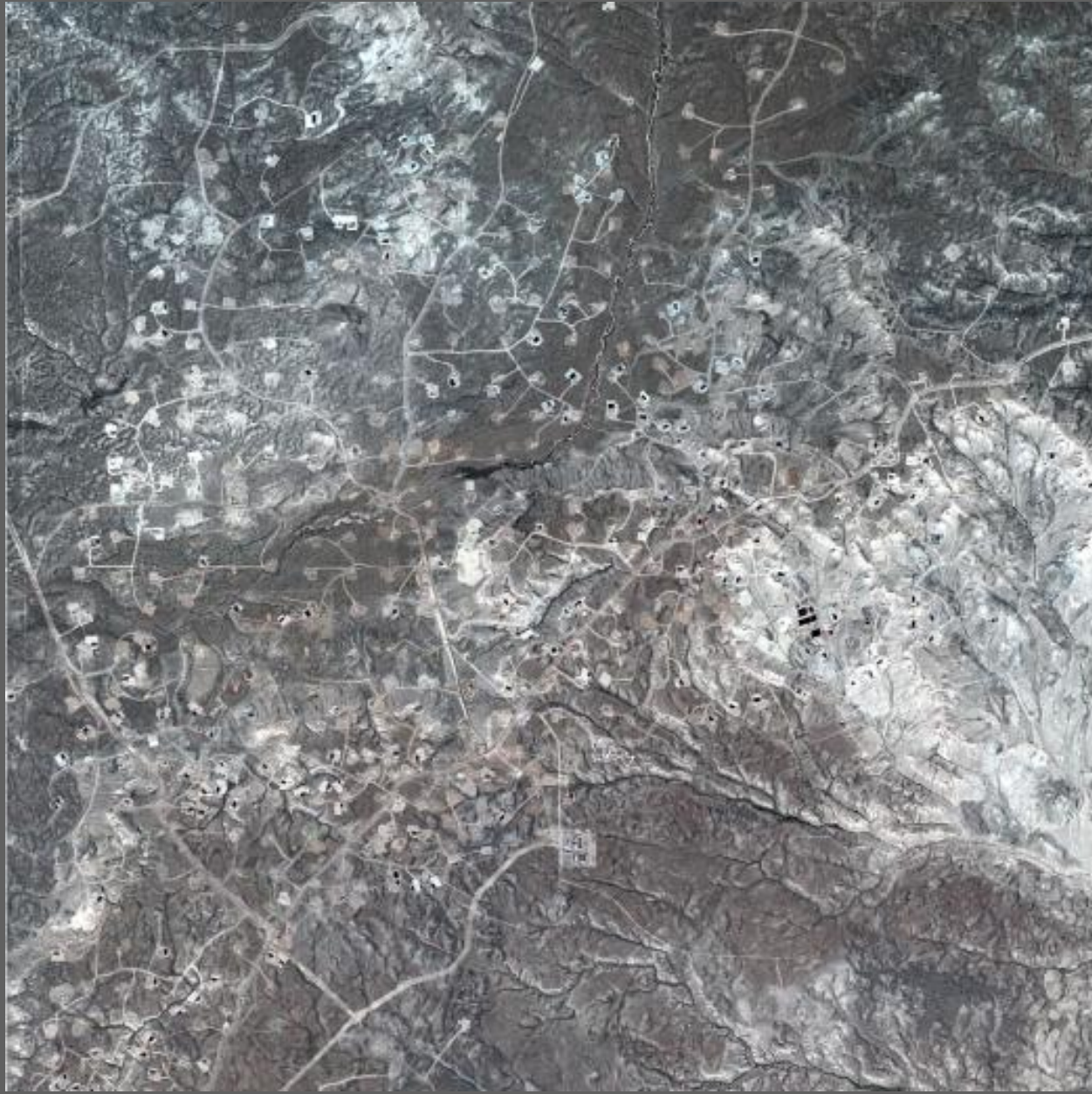


Squaretop Well – Wildlife Benefits

- Provides assured water for both wildlife and livestock, including water for fall pronghorn and other wildlife use, not previously present
- Provides fenced out areas for wildlife with some degree of overflow water running into these areas
- Direct benefits on at least 20 acres with potential indirect benefits on up to 30,000 acres (allotment size)
- Potential for turning on and off water as part of a management plan to distribute livestock

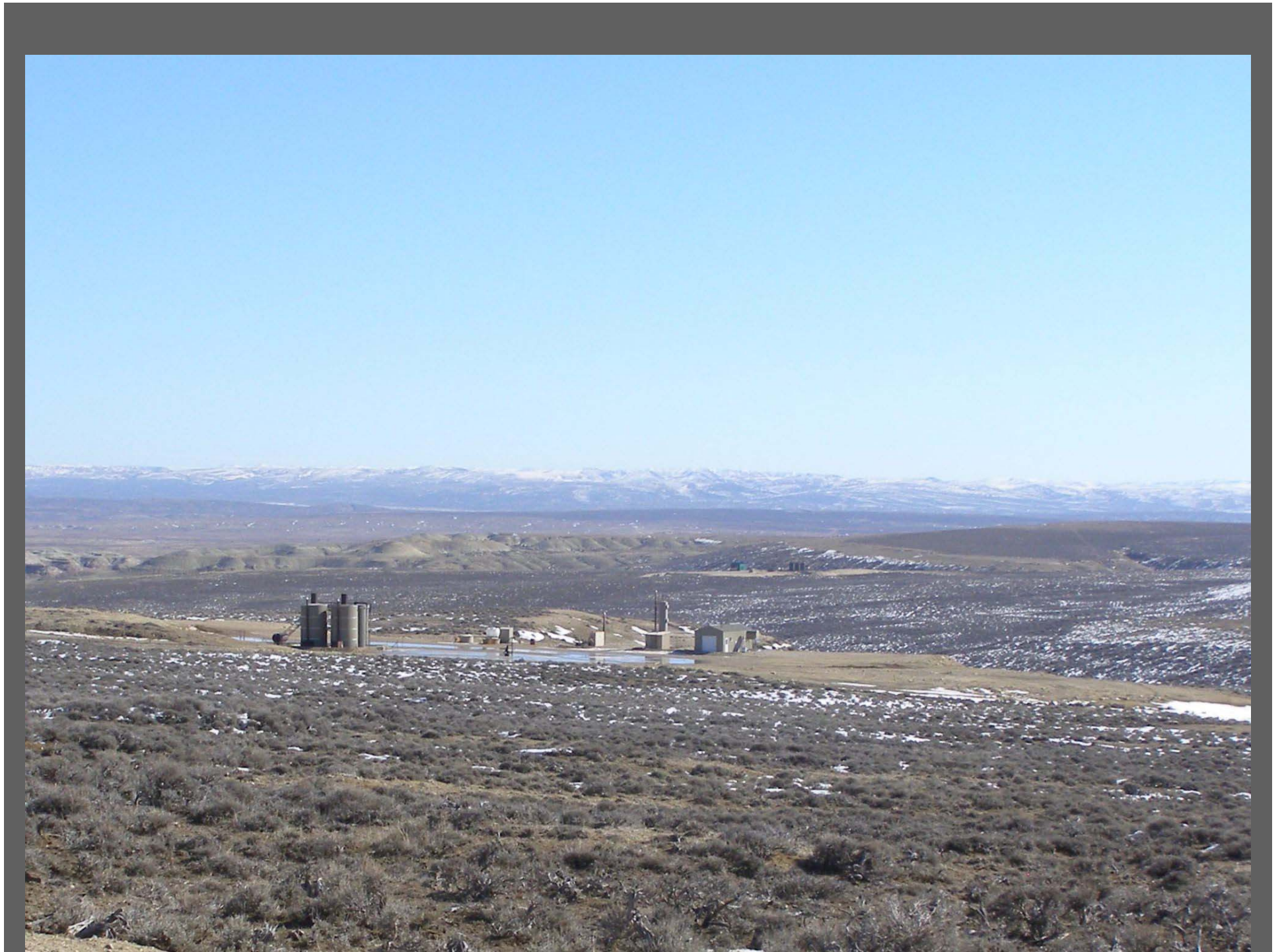












Habitat Monitoring

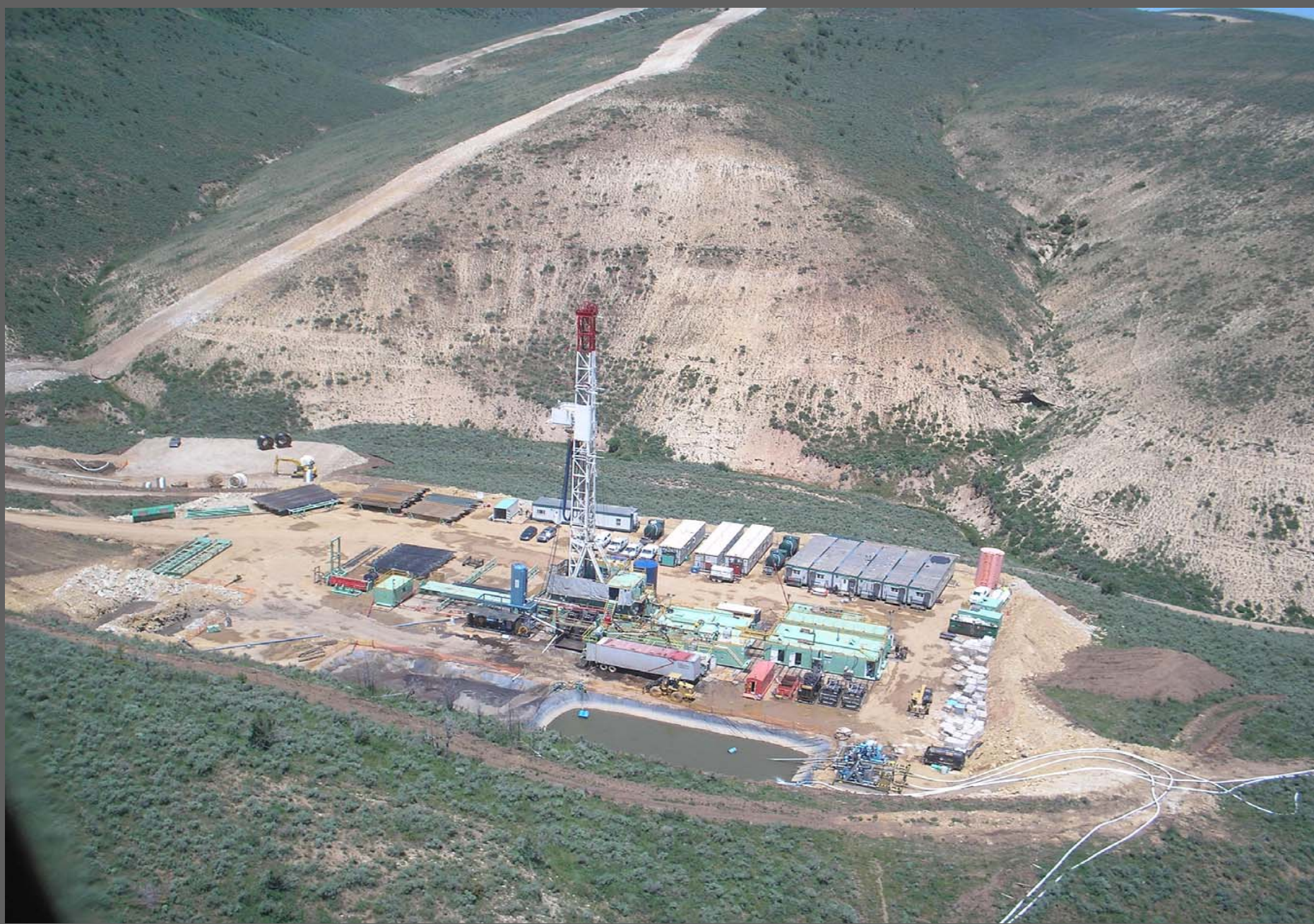


Oil shale









An example of an Oil and Gas Field Development Process:

The Jonah Field

JONAH INTERAGENCY OFFICE WILDLIFE MITIGATION



JIO – HISTORY



- Established in 2005 with the signing of the Jonah Infill Record of Decision
- \$24.5 million commitment from EnCana and British Petroleum for mitigation and monitoring
- Office comprised of representatives from 4 agencies
- Off-site (compensatory) Wildlife Mitigation included in funding needs (\$16.5 million)

Jonah Infill ROD

- Established significant wildlife impacts that could not be mitigated on-site
- Primary wildlife issues focused on 3 areas: “sage-grouse impacts, pronghorn migration corridors, and habitat impacts.”

Jonah Infill ROD (cont'd)

ROD – Identified 3 strategies for addressing cumulative impacts:

- Return field habitat function in the shortest time possible
- Perform on-site mitigation to the extent practicable and employ compensatory (off-site) mitigation (CM) when complete on-site mitigation is not effective in the short-term
- Institute an adaptive management process to ensure monitoring and both on- and off-site mitigation are effective

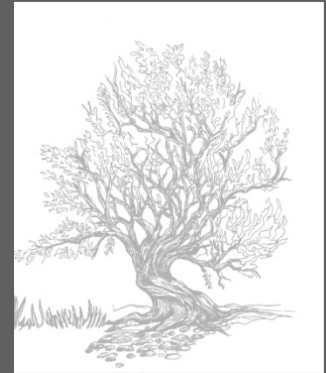
JIO – Scope of Work



Also within the Charter, the scope of work for JIO was included; and involved the following related to wildlife:

- Oversee the selection and effectiveness of 30,000 to 90,000 acres of offsite mitigation
- Monitor big game and sage-grouse populations
- Assure habitat restoration
- Assure vegetation surveys/Invasive species control
- Provide information to the respective agencies and the public regarding impacts, monitoring data, and mitigation success

Remainder of this presentation



- Illustrate what JIO has done from the aspect of Offsite Wildlife Mitigation
- Provide specific information on completed projects, that help set a precedence – in particular two projects
- Provide an overview of projects that currently have funding commitments
- Illustrate how JIO has been able to use it's funds to provide seed money for added partners

Cottonwood Ranch Conservation Planning



- Primary use is livestock grazing; done on a short duration type of system, with occasional high intensity use (primarily on easement areas and only during some years)
- Vegetation objectives were established using ecological site descriptions and sagebrush ecology information

Cottonwood Ranch Mitigation Goals



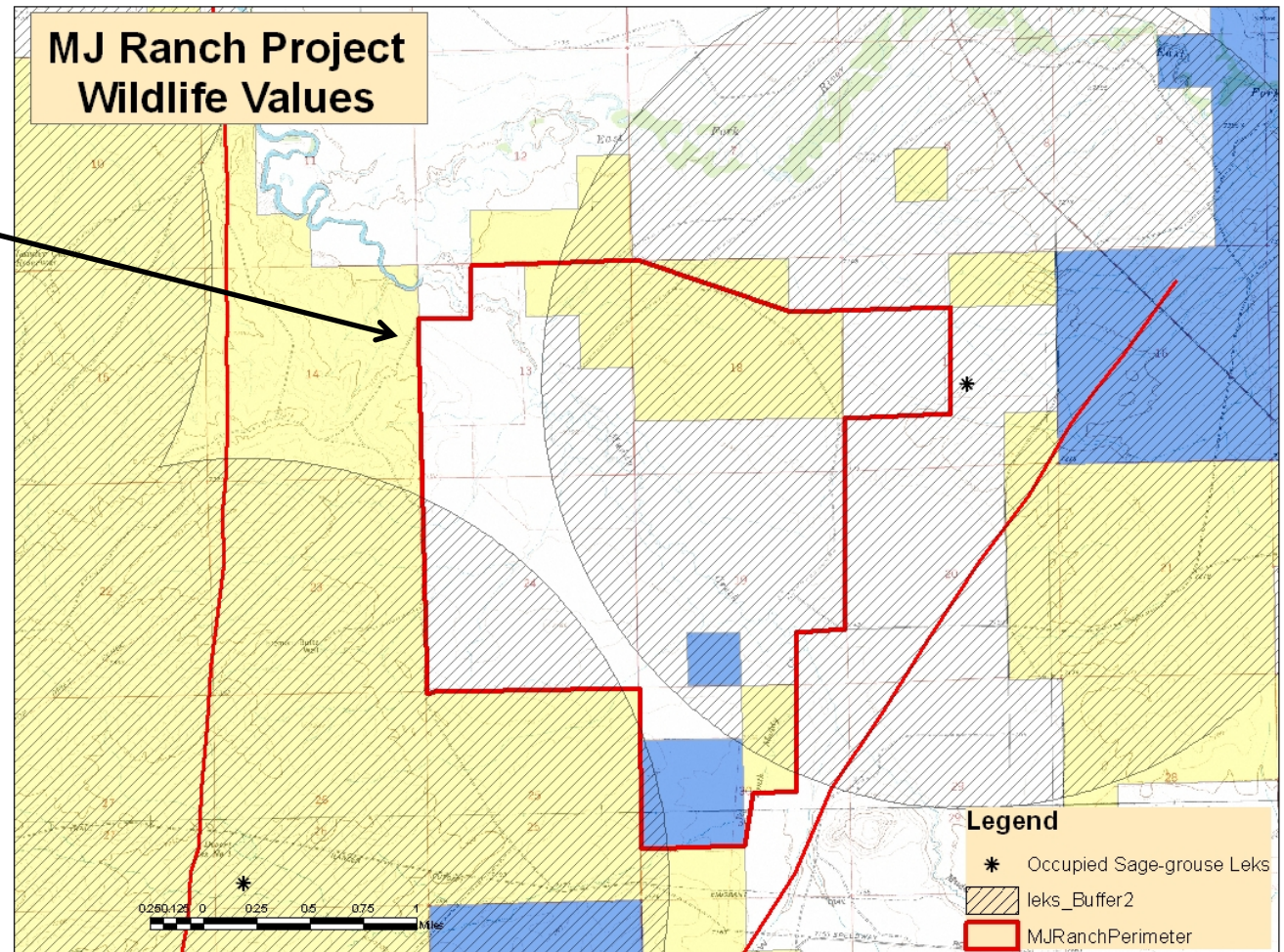
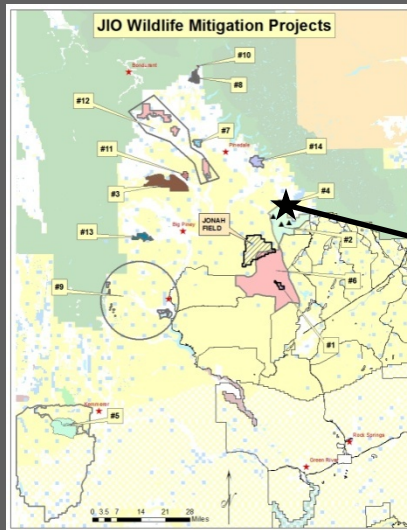
- Promote a healthy, productive mosaic of shrub age classes and canopy covers with a diversity of plant species in sustainable sagebrush communities
- Maintain and/or improve migration corridors for pronghorn and other big game species that use the Bench Corral area

Cottonwood Ranch Vegetation Goals



- Specific goals will be developed once the current baseline inventory is completed (by this winter)
- Ecological Site Descriptions (ESD's) are the basis of the inventory
- Goals will be based on preliminary "specific" goals provided for in the existing plan and relate back to ESD's

MJ Ranch – Location & Wildlife



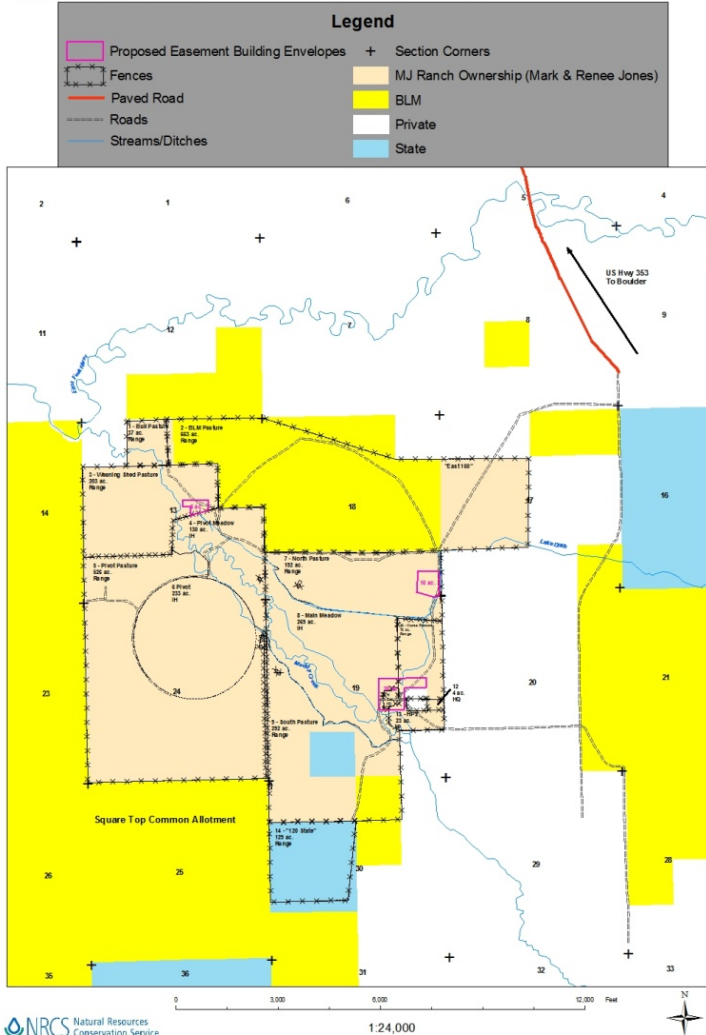
MJ Ranch - Planning

Location/Ownership Plat

Date: 12/26/07

Customer(s): MJ Ranch (Mark & Renee Jones)
District: Sublette County Conservation District
Approximate Acres: 2,778
Legal Description: T31N R106W & R107W

Field Office: Pinedale Service Center
Agency: Natural Resources Conservation Service
Assisted By: Jennifer Hayward, DC & Karen J. Clause, RMS

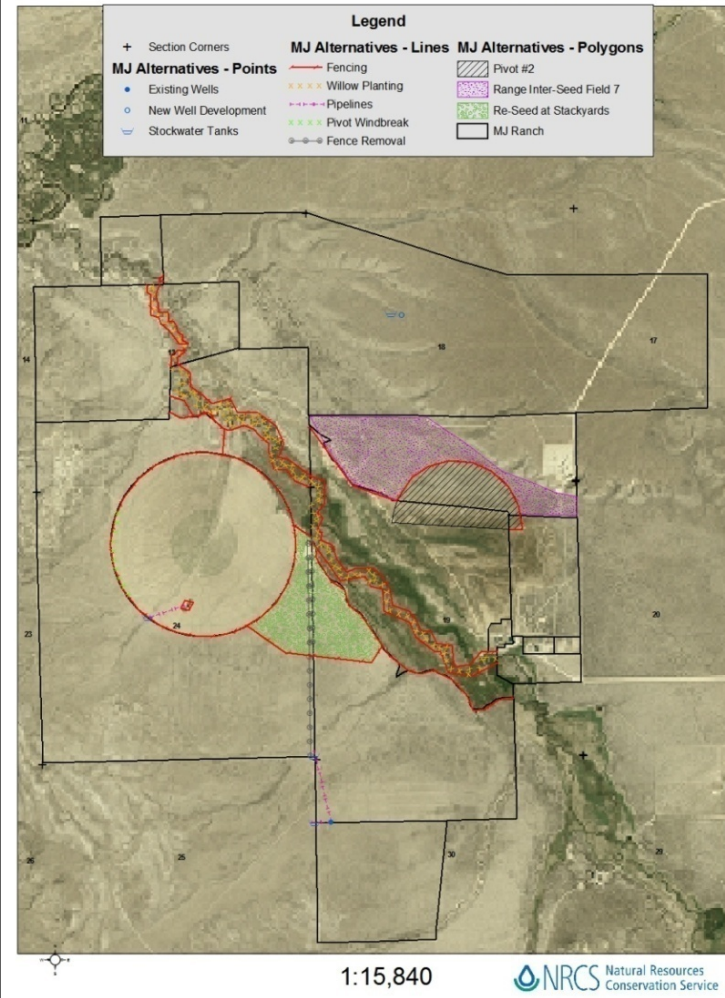


Planning Alternatives

Date: 12/19/07

Customer(s): MJ Ranch
District: Sublette County Conservation District
Approximate Acres: 2,778
Legal Description: T31N R106W & R107W

Field Office: Pinedale Service Center
Agency: USDA, NRCS
Assisted by: J. Hayward/K. Clause
Growing Season: 60-90 days
Precipitation/Ecological Zone: 10-14W



MJ Ranch – Alternative Selection

- Practices Selected

- Conservation Crop Rotation
- Fencing and modification
- Forage Harvest Management
- Irrigation Water & Nutrient Management
- Range Planting
- Riparian Forest Buffer
- Upland Wildlife Habitat Management
- Pasture & Hay Planting
- Prescribed Grazing

Conservation Easement & Plan

- Precedence for a conservation easement to also include a plan – set by Managers
- Helps ensure “mitigation” value (plan identifies strategies to maintain/enhance areas for impacted species)
- Has provided a strong direction for future mitigation work

Other JJO funded projects



Easements

- CRC Ranch – Upper Green*
- Diamond H Property – LaBarge Creek*
- Cottonwood Ranch II*
- Cross Lazy Two Ranch*
- Sommers-Grindstone Ranches**

*In progress

**Funding not committed at this time

Others

- Arambell Reservoir & Treatment Trials
- Elk Mountain/Red Canyon Rx Burn
- Jonah Nesting Platforms
- Boundary Allotment Enhancements*
- Dynamic Signs
- Cora-Noble Allotment Enhancement*
- Boulder Lake Allotment Enhancement*
- Wildlife Escape Ramps
- Rock Creek Subdivision Fence Modifications (Bottleneck)*
- Pronghorn Corridor Fence Inventory & Modifications
- Ryegrass Mowing

*In progress

JIO Funding & Affected Acres

- FUNDING:

- JIO Funding – \$8,298,930
- Partner Funding – \$9,523,279

- ACRES AFFECTED:

- Direct – 92,521*
- Indirect – 536,128**

- *Based on acres under conservation plan

- **Based on allotment size where projects have occurred

Other Projects Associated with JIO

- Strategic Plan
- JIO Baseline Vegetation Inventory
- Reclamation Criteria
- Livestock Mitigation
- Air Quality Monitoring

Website: http://www.wy.blm.gov/jonah_office/index.htm







Pinedale Anticline SEIS

 Concentrated Development Areas (Winter)

 Pad Reclamation

